

Date: Sat, 1 Oct 94 04:30:19 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #291
To: Ham-Homebrew

Ham-Homebrew Digest Sat, 1 Oct 94 Volume 94 : Issue 291

Today's Topics:

 Can combine two 50MHz Tx
 Help identifying some SMA devices and a circuit
 Please Recommend An Intro. Radio Book
Silver solder for SMT? (Was: Reuse surface mount parts?)
 Wanted Heathkit SB401 manual
 WTB: a few NE561 pll chips

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Wed, 28 Sep 1994 15:56:00 GMT
From: ihnp4.ucsd.edu!pacbell.com!sgiblab!spool.mu.edu!howland.reston.ans.net!
news.sprintlink.net!holonet!colossus.holonet.net!iat.holonet.net!kbsbbs!
tom.alldread@network.ucsd.edu
Subject: Can combine two 50MHz Tx
To: ham-homebrew@ucsd.edu

AC>Newsgroups: rec.radio.amateur.homebrew
AC>Path:
AC>holonet!colossus.holonet.net!agate!library.ucla.edu!csulb.edu!csus.ed
AC>u!ne From: acooney@netcom.com (Alan Cooney) Subject: Can combine two
AC>50MHz Tx signals? Message-ID: <acooneyCwpqqn.2J3@netcom.com>
AC>Summary: I'm looking for a broadband way to combine two 50MHz
AC>low-power signals Keywords: TRANSMIT BROADBAND COMBINER MULTIPLEXER
AC>RF SIX Organization: NETCOM On-line Communication Services (408
AC>261-4700 guest) Date: Mon, 26 Sep 1994 01:27:58 GMT
AC>Lines: 21

AC>Greetings:

AC>I'm looking for your suggestions on combining two or more six meter
AC>signals. These are in the 100 milliwatt range, and are relatively
AC>closely spaced (100-200 KHz). I need a broadband solution (untuned)
AC>if possible, so that the transmitter frequencies can be varied within
AC>a few hundred kilocycles or so without altering the need for a 'tune
AC>up'.

AC>What the heck is this for, you ask? I work for a company that builds
AC>remotely controlled models for the movie industry. We use six meter
AC>RC equipment with one power amp and antenna per RC 'channel', and
AC>that can add up to a rack of power amps and a field of antennas for a
AC>given shoot. We'd like to be able to combine at least two signals
AC>before amplification -- to cut the number of amps and antennas we
AC>have to fuss with.

AC>Any ideas? Cheers all. :)

AC>Alan
AC>WD6DES

Greetings Alan:

If you can accept 3 or 4 dB of loss (that would decrease your
output power to 40 mW or so per TX) an inexpensive combiner for two
signals could be made from a 75 Ohm CATV splitter connected up in
reverse (the combined tx signals come out the IN port). These splitters
typically provide isolation between the two output ports and are usually
designed to work from 5 to 300 MHz.

Make sure your amplifier is operated in a linear mode as
otherwise your tx signals will mix and generate intermodulation products
that could cause interference! I would suggest you do a careful test for
intermodulation in advance. Typical SSB amateur radio power amps just
may not be linear enough for intermodulation considerations.

73
Tom

Very Best Regards,

T.M. Alldread

* CmpQwk #UNREG* UNREGISTERED EVALUATION COPY

Date: 29 Sep 1994 19:17:38 GMT
From: pa.dec.com!nntpd.lkg.dec.com!iamu.chi.dec.com!little@decwrl.dec.com
Subject: Help identifying some SMA devices and a circuit
To: ham-homebrew@ucsd.edu

I purchased a couple "black boxes" at a recent hamfest and am trying to figure out what they are. They are built using surface mount devices and I don't recognize the part numbers. Can anyone help me identify the following components?

NEC part 8002 - appears to be 3 terminal white ceramic device as follows:

```
|.|  
= | | =  
|. |
```

??? part GB 12 - appears to be a 4 terminal black plastic case:

```
--+--+  
|GB|  
--+ +==  
|12|  
--+--+
```

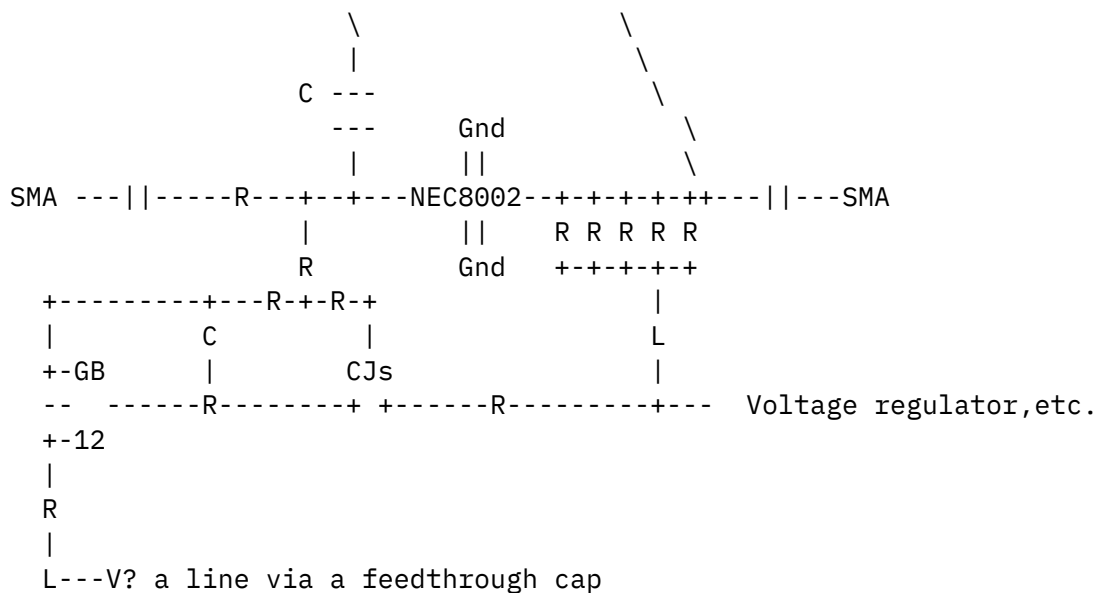
??? part CJs81?? - appears to be a tiny 3 terminal black plastic case and I'm not certain about the 81, it's written at a 90 degree angle to the CJs and is microscopic in size:

```
  |  
+---+---+  
| CJs |  
+---+---+  
  |   |
```

Also, how does one tell chip resistors from chip capacitors? I'm new to surface mount technology.

My guess is the device is some sort of uhf/microwave amplifier given that it has an SMA connector on each end and what appear to be two supply voltages, Vcc and bias? From the SMAs there are coupling capacitors leading to the NEC device with an apparent feedback loop. So it looks a little like (if I got the resistors and caps right):





Why all the resistors in parallel? Current handling?

Any guesses or information would be greatly appreciated before I try and fire these suckers up and sweep them.

73,
Todd
N9MWB

Date: 28 Sep 1994 22:52:07 -0600
From: ihnp4.ucsd.edu!agate!news.ucdavis.edu!library.ucla.edu!csulb.edu!nic-nac.CSU.net!usc!howland.reston.ans.net!news.sprintlink.net!tracker.ramp.com!glock.ramp.com!not-for-mail@network.ucsd.edu
Subject: Please Recommend An Intro. Radio Book
To: ham-homebrew@ucsd.edu

Lance Lascari WS2B (lascal@marcus.its.rpi.edu) wrote:
: Eric B. (browere@einstein.cs.ucdavis.edu) wrote:
: : I am very interested in how radio receivers/transmitters work and would
: : like someone to recommend a beginner book that is not infantile and
: : does contain experimentation circuits.

: I would suggest "solid state design for the radio amateur" (I think
: that's the title.. I don't have a copy myself) published by the ARRL.
: I think it's merely \$12 or so, and has lots of practical circuits as
: well as good discussion. The ARRL handbook is also a bible for this
: sort of information. Anybody have ordering information on the net?

The ARRL can be reached at 225 Main Street, Newington, CT 06111-1494.
Their phone number is (203)-666-1541. Solid State Design is indeed
a worthy book for beginner and expert alike.

Richard Kendrick CET WA7TWI

Date: Fri, 30 Sep 1994 19:36:30 GMT
From: ihnp4.ucsd.edu!sdd.hp.com!hpsc.it.sc.hp.com!news.dtc.hp.com!srngenprp!
alanb@network.ucsd.edu
Subject: Silver solder for SMT? (Was: Reuse surface mount parts?)
To: ham-homebrew@ucsd.edu

I guess it's my destiny in life to quash old-wife's tales on the Internet:

Gary Coffman (gary@ke4zv.atl.ga.us) wrote:
: alanb@hpnmarb.sr.hp.com (Alan Bloom) writes:
: >Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
: >[Re: soldering surface-mount devices]
: >
: >: If ordinary solder (63-37 tin-lead) is used, the lead can amalgamate with
: >: the silver that is fired onto the component. The result is that you can
: >: no longer solder to it. You must use something like a "silver-saturated"
: >: solder, or the appropriate solder paste. (Note: this is not the same as
: >: "silver solder", which has a much higher melting point.)
: >
: >Wow, I never heard that before. We use standard tin-lead solder all the
: >time around here for soldering SMT devices.

: Heh, heh, maybe that's why Tektronix gear is so much more reliable. ...

: It's true that using ordinary solder can cause the silver to leach
: out of the contacts on SMD components. That can lead to connection
: failures. That's primarily an issue with leadless SMDs like caps
: and resistors. It doesn't apply to leaded ICs. Their leads are
: tin plated, and solder fine with ordinary solder.

Ian G3SEK (G3SEK@ifwtech.demon.co.uk) wrote:

>... or to put it another way, ordinary solder dissolves the silver out
> of the plating on the component. Obviously this phenomenon only affects
> ceramic-bodied components such as Rs, Cs and Ls. ICs and other devices
> with solid metal legs can be resoldered for as long as they hold together :-)

Just to be sure I wouldn't lead anyone astray, I checked with the
surface-mount technology expert here at work about soldering SMT devices.

He said that:

1. Standard tin-lead solder is used universally throughout the industry.
2. Nearly all modern SMT devices are solder-dipped. (i.e. no silver)
3. Of the few SMT devices that do have a silver plating, they add palladium to the silver to improve solderability. Yes, some of the plating does leach into the solder, but that only improves the joint.

I suspect the myth of using silver solder started back in the old days, when chip components were not used on PC boards, but in microcircuits.

AL N1AL

Date: 30 Sep 1994 20:38:47 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!news.mic.ucla.edu!news.bc.net!
news.bcit.bc.ca!news@network.ucsd.edu
Subject: Wanted Heathkit SB401 manual
To: ham-homebrew@ucsd.edu

I am trying to obtain a manual and schematic for a Heathkit SB401 transmitter.

If anyone can help, please email me at cschmutter@bcit.bc.ca

Thanks

Date: 29 Sep 1994 04:42:10 GMT
From: ihnp4.ucsd.edu!agate!news.ucdavis.edu!library.ucla.edu!csulb.edu!nic-
nac.CSU.net!usc!math.ohio-state.edu!magnus.acs.ohio-state.edu!csn!
jabba.cybernetics.net!cybernetics.net!jbrown@network.
Subject: WTB: a few NE561 pll chips
To: ham-homebrew@ucsd.edu

Note to Tom Sefranek: Thanks for your note. All three of my attempts at e-mailing you a response have resulted in undelivered mail accompanied with the message "Service unavailable". Perhaps you could send a message with your e-mail address in the body?

Jeff

--

Jeff Brown jbrown@cybernetics.net

Date: 29 Sep 1994 16:44:52 GMT

From: [ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!EU.net!
Germany.EU.net!news.dfn.de!news.belwue.de!news.uni-stuttgart.de!
moritz@network.ucsd.edu](mailto:ihnp4.ucsd.edu!dog.ee.lbl.gov!agate!howland.reston.ans.net!EU.net!Germany.EU.net!news.dfn.de!news.belwue.de!news.uni-stuttgart.de!moritz@network.ucsd.edu)
To: ham-homebrew@ucsd.edu

References <acooneyCwrz2B.Ht8@netcom.com>, <36ammi\$8t8@newsbf01.news.aol.com>,
<1994Sep29.092538.18283@cabell.vcu.edu>n.de
Subject : Re: Torroid on feedline absorbs power?

In article <1994Sep29.092538.18283@cabell.vcu.edu>, J. Sherwood Williams <jwill@cabell.vcu.edu> wrote:
>

> For RG-58 type coax: Use 50 of the FB-43-2401 Torroids
 ^^

Is the price not around 1\$ each? this would make an expensive antenna.

Moritz DL5UH

End of Ham-Homebrew Digest V94 #291
